1. Rejection of Claims 12-24 Under 35 U.S.C. §103(a)

The Office Action states,

Claims 12-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (U.S. 5,965,759) in view of Yoder et al. (Organometallics, 1998).

Lin discloses methods for isomerization of a meso isomer of a metallocene such as $Me_2Si(2\text{-}Me\text{-}4\text{-}PhInd)ZrCl_2$ to its racemic isomer in the presence of a group I or group II halide (see examples). The reference does not disclose use of salts having formula $[R_4W]X$, as recited in the instant claims. Yoder et al. discloses use of tetra-n-heptylammonium chloride as a metallocene isomerization agent (Table 3). One having skill in the art would recognize the advantage that isomerizations may be carried out in aprotic nonpolar solvents such as toluene, and that reactions are carried out in homogeneous solution, thereby obviating the need to filter the product, as would be required using salts in Lin's process. The combination of references would have suggested to one having ordinary skill in the art that tetra-n-heptylammonium chloride is a useful isomerization agent for use where toluene is required as solvent or where separation of salts in an extra step is not desired. Thus, it would have been obvious to one having ordinary skill in the art to modify Lin's process using the quaternary ammonium salt disclosed in Yoder et al., and one having ordinary skill in the art would have expected such an embodiment to work.

RESPONSE

Applicant respectfully traverses the rejection of claims 12-24.

The U.S. Supreme Court in *Graham v. John Deere Co.*, 148 U.S.P.Q. 459 (1966) held that non-obviousness was determined under §103 by (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims

at issue; (3) resolving the level of ordinary skill in the art; and, (4) inquiring as to any objective evidence of non-obviousness.

Accordingly, for the Examiner to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142.

With respect to the current rejection, Applicant respectfully believes U.S. Patent 5,965,759 (herein referred to as "Lin") in view of Organometallics 1998, 17, 4946-4958 (herein referred to as "Yoder, et al."), does not disclose, teach, or suggest Applicant's currently claimed process.

In particular, the current Office Action states,

> Lin discloses methods for isomerization of a meso isomer of a metallocene such as $Me_2Si(2\text{-}Me\text{-}4\text{-}PhInd)ZrCl_2$ to its racemic isomer **in the presence of a group I or group II halide** (see examples). **The reference does not disclose use of salts having formula $[R_4W]X$, as recited in the instant claims**. (Emphasis added)

To straddle this factual deficiency in Lin, the Office Action then states,

> Yoder et al. discloses use of tetra-n-heptylammonium chloride as a metallocene isomerization agent (Table 3). One having skill in the art would recognize the advantage

> that isomerizations may be carried out in aprotic nonpolar solvents such as toluene, and that reactions are carried out in homogeneous solution, thereby obviating the need to filter the product, as would be required using salts in Lin's process. The combination of references would have suggested to one having ordinary skill in the art that tetra-n-heptylammonium chloride is a useful isomerization agent for use where toluene is required as solvent or where separation of salts in an extra step is not desired. Thus, it would have been obvious to one having ordinary skill in the art to modify Lin's process using the quaternary ammonium salt disclosed in Yoder et al., and one having ordinary skill in the art would have expected such an embodiment to work.

However, Applicant respectfully traverses the Examiner's conclusion on several grounds. First and foremost, even if one were to modify the process of Lin as conjectured by the Examiner, which Applicant fully denies, Applicant respectfully believes one of ordinary skill in the art would not have selectively plucked the isomerization catalyst relied upon by the Examiner from the disclosure of Yoder, et al. In particular, Yoder, et al. discloses the addition of 30 mol % of tetra-*n*-heptylammonium chloride in toluene "results in immediate initiation of isomerization to the **meso isomer**." See page 4951, second column, last paragraph in Yoder, et al.

Alternatively, as outlined on page 1, lines 2-13, in Applicant's specification,

> The present invention relates to a process for **the conversion of the meso or meso-like form** of a metallocene compound **to the corresponding racemic or racemic-like form**. The meso or the meso-like form to be subjected to the process of the invention can be admixed with the corresponding racemic (rac) or racemic-like form.

> Metallocene compounds are well known complexes, mainly used as catalyst components for the polymerization of olefins. Processes for the synthesis of such metallocene compounds tend to produce mixtures of racemic and meso forms. Usually the racemic form produces stereoregular polymers while the meso form is inactive or produces low molecular weight atactic polymers. The racemic form is therefore the most used as polymerization catalyst component. Consequently it is desirable to obtain from the synthesis **the racemic (rac) form or a mixture where the racemic form is predominant in order to reduce the work for the physical separation of the two isomers.** (Emphasis added)

Accordingly, the Examiner not explained *why*, absent the guidance provided in Applicant's specification, one would have selectively plucked tetra-*n*-heptylammonium chloride from Yoder, et al., nor has the Examiner explained *why* one would have modified the process of Lin by using tetra-*n*-heptylammonium chloride instead of the critically disclosed isomerization catalysts disclosed therein. However, this is the Examiner's initial burden to establish a *prima facie* case of obviousness. See MPEP §2142. For this reason alone, Applicant respectfully believes the current rejection should be withdrawn.

Notwithstanding the above, the Examiner has not addressed *why* one would have selectively plucked tetra-*n*-heptylammonium chloride from Yoder, et al. in the first place, since Yoder, et al. discloses isomerization using tetra-*n*-heptylammonium chloride in toluene results in producing exactly opposite what Applicant is currently claiming (i.e., "results in immediate initiation of isomerization to the **meso isomer**." [*Id.*]) Since Yoder, et al.

discloses a process for producing exactly opposite what Applicant is currently claiming, Applicant respectfully believes the Examiner not established a *prima facie* case of obviousness, and, in fact, Applicant respectfully believes Lin in view of Yoder, et al. is exactly the antithesis of obviousness, and establishes Applicant's currently claimed process as novel and unobvious. See MPEP §2141.02 VI, §2143.01 V, and §2143.01 VI. Accordingly, Applicant respectfully believes the current rejection should be withdrawn.

In light of the above, Applicant respectfully believes claims 12-24 are patentably distinct over Lin in view of Yoder, et al. Accordingly, Applicant respectfully requests the Examiner to withdraw the current rejection.

CONCLUSION

Based upon the above remarks, the presently claimed subject matter is believed to be novel and patentably distinguishable over the prior art of record. The Examiner is therefore respectfully requested to reconsider and withdraw the pending rejection, and allow pending claims 12-24. Favorable action with an early allowance of the claims pending in this application is earnestly solicited.

In order to advance prosecution on the above-identified application, the Examiner is welcomed to telephone the undersigned practioner if he has any questions or comments.

Respectfully submitted,

By: _____

Jarrod N. Raphael
Registration No. 55,566
Customer No. 34872

Date: May 14, 2008

Basell USA Inc.
Delaware Corporate Center II
2 Righter Parkway, Suite 300
Wilmington, Delaware 19803
Telephone No.: 302-683-8176
Fax No.: 302-731-6408

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on May 14, 2008.

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Signature

May 14, 2008
Date